

Post-Doctoral positions for development and clinical translation of fast high-resolution multiparametric quantitative neuroimaging

Martinos Center for Biomedical Imaging, Department of Radiology,
Massachusetts General Hospital, Harvard Medical School, Boston, USA

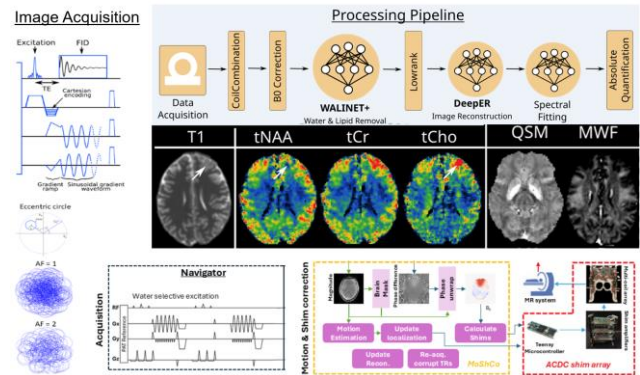


Project description:

Post-doctoral positions are available at Martinos Center for Biomedical Imaging, Department of Radiology, Massachusetts General Hospital, Harvard Medical School, Boston, USA for the following research areas:

- development of novel MRI and MRSI methods for quantitative multiparametric structural and neurochemistry mapping of brain.
- improve spatial resolution, acquisition time, data quality, quantification, and robustness of imaging methods for precision medicine.
- non-cartesian trajectories, compressed sensing, low-rank model, real-time motion and shim correction, ultra-high field, $1\text{H}/\text{X}$ -nuclei
- deep learning image reconstruction and analysis
- integration with novel MR hardware developed at Martinos Center
- clinical trials in patients with glioma and neuro-psychiatric diseases.
- Further details:

<https://pubmed.ncbi.nlm.nih.gov/39679200/>
<https://pubmed.ncbi.nlm.nih.gov/39894238/>
<https://pubmed.ncbi.nlm.nih.gov/40905334/>
<https://pubmed.ncbi.nlm.nih.gov/39315894/>
<https://pubmed.ncbi.nlm.nih.gov/33343494/>
<https://pubmed.ncbi.nlm.nih.gov/29662077/>
<https://pubmed.ncbi.nlm.nih.gov/24345390/>



Career opportunities:

These projects are part of an Academic-Industry Partnership between Massachusetts General Hospital and Siemens Healthineers funded by the National Institutes of Health. The following opportunities will be available:

- excellent environment that brings together outstanding academia, clinics and industry
- candidates will have opportunities to pursue a future career in any of these directions.
- candidates with engineering background and interest for industry career will establish strong connection with Siemens Healthineers.
- Martinos Center has unique research infrastructure dedicated to human imaging: two 7T MR scanners including a 7T Terra.X with strongest & fastest 7T human gradient (Impulse), six 3T MR scanners including Connectome 2.0 scanner with strongest & fastest 3T human gradients, two MR/PET scanners, two ^{13}C hyperpolarizers, TMS, RF lab, and high-performance GPU servers for deep learning.
- live in a vibrant city known for high quality of life and as the premier global hub for biomedical research, biotech industry, and healthcare.

Qualifications:

Candidates that have experience with one or more of the following:

- MR pulse sequence programming, image reconstruction, MR physics
- Non-cartesian encoding, low-rank, reconstruction of undersampled data
- Deep learning, Data science, mathematical modeling
- Programming skills: C++, Python, PyTorch, Tensorflow, Docker, Linux, Matlab, Julia, Mathematica
- Neuroimage software: FSL, Freesurfer, MINC, AFNI, SPM, LCMModel, jMRUI
- Additional experience with MR hardware is beneficial.
- PhD degree in STEM: physics, electrical/biomedical engineering, computer science, applied mathematics, data science, neuroscience.

We seek highly motivated and innovative individuals who can push the limits of imaging methods, solve difficult problems, overcome technical challenges, and are interested in clinical translation. Excellent organizational skills to handle multiple tasks working independently and as part of a multidisciplinary team at a fast pace. The post-doctoral fellows will have the opportunity and are expected to develop new ideas and advance their own research interests.

Application:

MGH is an equal opportunity and affirmative action employer. Salary is commensurate with experience. Positions are available immediately and a minimum of two years commitment is required. Positions can be renewed up to five years based on satisfactory yearly progress report. Interested candidates should send their CV, cover letter with research interests and 3 letters of recommendation to Dr. Ovidiu C. Andronesi, MD, PhD, Associate Professor of Radiology, Harvard Medical School and Director of Multinuclear MR Imaging at Martinos Center, MGH (oandronesi@mgh.harvard.edu).